SITE VISIT AND RESPONSE ACTION ALTERNATIVES

AMES LANDFILL SPILL

RAC II, DELIVERY ORDER 23, TASK 10,

Introduction

Engineering Field Activity, Northwest (EFA) sent a Technical Direction Letter, dated April 4, 1997, directing Foster Wheeler Environmental to visit the Ames Landfill and recommend appropriate response actions. The visit was held the morning of April 4, and included:

Chris Drury - EFA	LT Nunnes - EFA	Andy Bolt - FWENC
Pat Donnelly - EFA	Eric Hanger - EFA	Bernie Wong - FWENC
Jim Reeves - EFA		

The group met at EFA, NW at 10:00 a.m. We then proceeded to the Kitsap County Health Department's (Health Department) Poulsbo office. The Health Department provided Eric Hanger, EFA legal counsel, with their file on the Ames Landfill. This file was briefly reviewed during the drive to the site. The file included several drawings of the landfill, copies of a Puget Sound Naval Shipyard (Shipyard) contract for waste disposal at the Ames Landfill, a November 1969 article in the Bremerton Sun regarding the County Commissioners desire to close the landfill while the Shipyard continued to dump their waste, and other information collected by the Health Department.

Site Visit

The Ames Landfill is located approximately 1.5 miles west of Gorst along the southeast side of State Highway 3. The seven acre former landfill is currently the site of *Ames Auto Wrecking*. Figure 1 shows the location of the site, while Figure 2 is a copy of a landfill drawing found in the Health Department's file on the Ames Landfill. The landfill was created by filling in the small river valley created by Gorst Creek. This valley is approximately 400 feet wide and approximately 100 feet deep and has the classic V-shape seen in young rivers and streams. Based on the landfill drawings provided by the Health Department, a (*dimension*) culvert was placed under the landfill to carry the flow of Gorst Creek from the upstream edge of the landfill to a downstream discharge point. The downstream discharge point is not visible, and has apparently been covered by mud and debris slides. This discharge point is located at the toe of a steep slope that is eroding away due to rainfall. From this point, Gorst Creek continues to flow for approximately 750 feet before entering a 36-inch culvert that carries the creek through the fill area created during the construction of State Highway 3.

The Ames Landfill is located on private property. The Washington State Department of Transportation (WSDOT) has a right-of-way that borders the landfill. Prior to visiting the site, Chris Drury of EFA received permission from WSDOT to enter their right-of-way and to inspect the slide area of the Ames Landfill.

The Ames Landfill slide site was entered from State Highway 3 at the northeast end of the southern guardrail above Gorst Creek. The approximately 750 feet of Gorst Creek between the highway culvert and the toe of the landfill slope was littered with landfill debris. While walking from the highway towards the landfill, the observed debris included a 500-gallon tank, an old tire, a hospital type blood bag, various cans, a second 500-gallon tank, a washing machine, a syringe, and miscellaneous landfill debris scattered throughout the area. Much of the debris located near the highway culvert was partially buried in sand and silt carried by the creek, while debris closer to the landfill appeared to be laying on the surface. The conditions at the site indicate that the debris has been moving downstream from the landfill for awhile. Photographs of the debris located between the highway culvert and the toe of the slope are located in Appendix A.

While standing at the toe of the slope and looking up towards the top of the landfill, it was evident that the landfill has been eroding for some time. Several rills and washes exist near the toe of the slope. One of these rills was stained a reddish-brown color. The entire face of the slope was littered with landfill debris including automobiles and automotive parts, 5-gallon metal containers, various types of scrap metal (origin unknown), and various cans and containers. There was also evidence of a slide that uprooted several trees in the center of the slope area. This was likely a recent slide since the root balls on the trees still contained a large mass of soil and the trees themselves still appeared healthy. The top 10 to 15 feet of the landfill is a sheer wall which has been undercut, possibly as a result of the recent slide. In its current condition, this area will continue to either erode or slide with time, exposing more landfill debris. The sheer wall at the top of the slope provided a rather clean cross-sectional view of the landfill cover. Based on observations of this wall, there is approximately one to two feet of soil cover over the landfill debris. Photographs of the landfill slope are located in Appendix A.

Based on observations in the field, Gorst Creek appears to be a *word?* creek, meaning it is recharging the groundwater table. There were no seeps or springs observed along the channel edges, indicating a word creed or a creed that is charged by groundwater. Apparently there are several homes downstream that use groundwater as their drinking water source. Jackson Park and the Naval Hospital apparently use Gorst Creek as their drinking water source.

Concerns

The recent slide was discovered by WSDOT during routine sampling of Gorst Creek. The sample team observed garbage and debris along the creek, and walked upstream to try and find a source. They continued upstream until they discovered the source was debris coming from the exposed face of the former Ames Landfill located over Gorst Creek. The results of their water sample analysis are unknown at this time.

Because the culvert that diverts Gorst Creek under State Highway 3 is located downstream of the slide area, WSDOT is concerned that the debris will plug their culvert. If the culvert becomes plugged, water will begin to back up behind the plug, turning the highway embankment into a dam. This would be detrimental to the highway. Seeps would likely occur as water travels through the embankment. These seeps would likely cause erosion of the highway embankment

If the valley behind this newly created dam were to fill with water, flow over the road would be a hazard to vehicles and would wash out the downstream highway embankment. In a meeting held on Monday, March 31, WSDOT expressed these concerns.

With landfill debris exposed and moving down Gorst Creek, a drinking water source, both the Clean Water Act and Safe Drinking Water Act requirements will be concerns of both the Washington State Department of Ecology (Ecology) and the Health Department.

Based on the fact that debris from the landfill is exposed, Ecology will likely begin evaluating the site under the Model Toxics Control Act (MTCA). With the recent discovery and reporting of the site, the next step Ecology will likely take is to perform and initial investigation followed by a Site Hazard Assessment. Based on the Site Hazard Assessment and Ecology's evaluation of the hazards, the site may be added to the Hazardous Sites List. If added to the list, Ecology would oversee the Remedial Investigation and Feasibility Study (RI/FS) of the site. To address immediate threats at the site, Ecology may require a Removal Action to occur concurrently with the RI/FS process. Throughout this process, Ecology would be the lead the regulatory agency. Historically, most of the sites Ecology oversees under MTCA are petroleum related releases and other small sites.

The Environmental Protection Agency (EPA) may have concerns about the site hazards and elect to oversee the site under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Often referred to as Superfund, the EPA's role under the CERCLA process is very similar to Ecology's role under MTCA, described above. The site would be evaluated and a score, based on the risks, given to the site. Based on the score, the site may be added to the National Priority List (NPL) and the RI/FS process, along with any required remedial action, would begin. Because this is a landfill with apparent threats to the environment, the EPA may assume control of the site and oversee any investigations and remediation of the site.

The general public will likely be concerned with the site because of the potential exposure to landfill debris and the possible contamination of Gorst Creek. Public involvement cannot be avoided if Ecology places the site on their Hazardous Sites List or the EPA places the site on the National Priority List. In fact, any public outcry may drive the Regulators (Ecology or EPA) to take action.

The Navy is concerned about the site based on evidence in the Health Department's file documenting the Shipyard's use of the landfill. If the Regulators take action at the site, Potentially Liable Parties (PLPs) will be sought out and asked to pay for the cleanup. PLPs will likely include the current land owner, the landfill operator, transportation companies that brought debris to the landfill, and any counties, cities, businesses, organizations, and individual that had their waste dumped in the Ames Landfill. Typically, the Regulators will pursue the most financially viable PLPs to reimburse the cost of the investigations and remediation. Since the Navy will be viewed as financially viable, they may be directed to pay for all or a portion of the cleanup.

Remedial Action Alternatives

No action required (unlikely case)

Cut-off wall to prevent debris from blocking culvert

Extend culvert under existing landfill to tie into culvert under State Highway 3.

Cut back existing landfill slope to a stable slope, new cover to prevent erosion. Requires cutting into landfill - can recycle (landfill mining) metals that are removed.

Build out new slope to make it stable, requires tree removal and possible encroachment into WSDOT right-of-way

Install a landfill cap per WAC 173-304 standards. Will require long-term monitoring and O&M

Extreme case - dig up entire landfill, recycle to max extent feasible, place remainder in permitted landfill.